



# The American Society of Tropical Medicine and Hygiene

Advancing global health since 1903

## Labor, Health & Human Services, and Education FY 2011 Appropriations Tropical Medicine Research and Development Issue Brief

*"We can save millions of lives over the coming years by scaling up the malaria control tools that we already have available. However, we know that the malaria parasite is a formidable opponent, and that if we are to ultimately eradicate malaria, we need new tools. The unprecedented recent spending on the research and development of these tools, including a vaccine against malaria, is a critical component of the long-term strategy against malaria."*

*-Margaret Chan, World Health Organization (WHO) Director WHO World Malaria Report 2009*

*"Smart strategies, good will, and good results brought the neglected tropical diseases into the spotlight. Supported by a strong coalition of partners, the introduction of integrated approaches to mass preventive chemotherapy raised the possibility, for the first time, that many of these ancient diseases could be eliminated by 2015."*

*-Margaret Chan, World Health Organization (WHO) Director End-of-Year Message 2009*

The American Society of Tropical Medicine and Hygiene (ASTMH) – the nation’s leading professional organization for tropical medicine – represents 3,700 researchers and clinicians engaged in the battle against infectious and tropical disease in the United States and internationally. ASTMH promotes world health through research and education to prevent and control tropical diseases.

As part of our efforts, we advocate for implementation and funding of federal policies and programs that seek to reduce, prevent, and control a myriad of infectious tropical diseases, including, but not limited to, malaria, cholera, and tuberculosis.

For the 2<sup>nd</sup> Session of the 111<sup>th</sup> Congress (2010), our public policy agenda includes issues related to diminishing the global impact of malaria, neglected tropical diseases (NTDs), arboviruses, and diarrheal diseases. To that end, ASTMH encourages Congress and the Administration to expand FY 2011 funding for – and commitments to – malaria and tropical disease control, especially research initiatives funded within the Labor, Health & Human Services, and Education (LHHS) Appropriations bill that support research and public health activities related to the prevention, treatment, and eradication of these diseases domestically and internationally.

### FY 2011 LHHS Funding for Malaria Control

**ASTMH calls upon Congress and the Administration to provide the following allocations in the FY 2011 LHHS Appropriations measure to support a comprehensive effort to eradicate malaria:**

- **\$18 million to the Centers for Disease and Control and Prevention (CDC) for malaria research, control, and program evaluation efforts with a \$6 million set-aside for program monitoring and evaluation;**
- **Direct funding to the CDC for NTD work and support ongoing work on diarrheal diseases;**
- **\$35 billion to National Institutes of Health (NIH);**
- **\$5.04 billion to the National Institute of Allergy and Infectious Diseases (NIAID); and**
- **\$78.5 million to the Fogarty International Center (FIC).**

ASTMH asserts that the battle against tropical diseases requires funding for a comprehensive approach to disease control, including public health infrastructure improvements; vector abatement initiatives; increased availability of existing drugs and vaccines; and development of new drugs, vaccines and improved diagnostics. Much of this important work is currently underway; however, additional funds and a greater commitment from the federal government are necessary to make progress in tropical disease prevention, treatment, and control.

### **CDC Malaria Efforts - Background**

The CDC conducts research to address pertinent questions related to malaria and engages in prevention and control efforts, especially as a lead collaborator on the President's Malaria Initiative. Specifically, the CDC maintains several domestic activities, international activities, and research activities, including surveillance, investigations of locally transmitted malaria, advice and consultations and diagnostic assistance.

The CDC's research program aims to improve understanding of malaria. Research is conducted on numerous topics, including: the biology of host-parasite relationships, immune response to malaria, host genetic factors associated with malaria, parasite genetic diversity and drug resistance, HIV and malaria interaction, including efficacy and durability of insecticide-treated nets in preventing illness and deaths, new strategies to prevent and treat malaria in pregnancy, evaluating approaches to improve access to anti-malarial treatment and delay the appearance of anti-malarial drug resistance, improved transmission reduction strategies, vaccine development and evaluation, and many other topics.

Malaria remains one of the leading causes of death and disease around the world. CDC participates in several global efforts:

- *The President's Malaria Initiative (PMI)* - The CDC is crucial partner in the PMI, a \$6.2 billion, nine-year effort led by the U.S. Agency for International Development (USAID) in conjunction with CDC and other government agencies to lower the incidence of malaria in 15 targeted countries in sub-Saharan Africa by 50 percent.
- *Amazon Malaria Initiative (AMI)* - This program works with countries in South America to combat the reemergence of malaria in that part of the world. Participating countries are Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela.
- *West Africa Network Against Malaria During Pregnancy* - CDC works with countries in Francophone West Africa to encourage the use of intermittent preventive treatment with sulfadoxine-pyrimethamine (IPTp/SP) to prevent anemia and death in pregnant women and malaria-related low-birth weight in their newborns.

- *Preventing and Controlling Malaria During Pregnancy in Sub-Saharan Africa* – CDC works with many partners to prevent and control malaria among pregnant women and their newborns in sub-Saharan Africa.
- *International Red Cross and the Expanded Program for Immunizations* – CDC works with these groups to implement and evaluate the effectiveness of distributing ITNs during immunization campaigns and during routine vaccine visits.

CDC collaborations support treatment and prevention policy change based on scientific findings; formulation of international recommendations through membership on World Health Organization (WHO) technical committees; and work with Ministries of Health and other local partners in malaria-endemic countries and regions to develop, implement, and evaluate malaria programs. In addition, CDC has provided direct staff support to WHO, UNICEF, the Global Fund to Fight AIDS, Tuberculosis, and Malaria, and the World Bank – all stakeholders in the Roll Back Malaria (RBM) Partnership.

### **CDC Tropical Disease Efforts - Background**

CDC scientists have decades of experience working on NTDs and have provided much of the evidence-based science that underlies the global policies and programs in existence today for diseases such as lymphatic filariasis and onchocerciasis. CDC's support to countries builds on the agency's core competencies of surveillance, operational research, translation of research to practice, and monitoring and evaluation.

The CDC is continuing to provide leadership for NTD programs by working in close collaboration with our partners to apply CDC expertise on elimination and eradication of NTDs by:

- Providing technical assistance and training to Ministries of Health (or other partners) for program planning and management, implementation, monitoring and evaluation and surveillance;
- Providing leadership in the development of new tools and strategies to accelerate elimination and control of these diseases;
- Developing new approaches to integrate NTD programs with other USG-funded global health efforts, including PEPFAR, PMI and maternal and child health programs; and
- Developing a strategy for integrated mapping for NTDs, with the objective of addressing one of the limiting factors for scaling up program activities: the lack of prevalence data.

### **NIH Malaria Efforts - Background**

As the nation's and world's premier biomedical research agency, the NIH and its sub-institutes play an essential role in the development of new anti-malarial drugs, better diagnostics, and an effective malaria vaccine.

NIH estimates that in FY 2010 it will spend approximately \$141 million for malaria research and \$33 million for research related specifically to creating a malaria vaccine. NIAID, the lead institute for this research, has developed an Implementation Plan for Global Research on Malaria, which is focused on five research areas: vaccine development, drug development, diagnostics, vector control, and infrastructure and research capability strengthening.

- *Vaccine Development* – No malaria vaccine exists. NIAID introduced a research agenda for malaria vaccine development in 1997, the aim of which is to support discovery and characterization of new vaccine candidates, production of pilot lots, and clinical evaluation of promising candidate vaccines.
- *Drug Development* – Reports of drug-resistant malaria are increasing around the world. NIAID is involved in improving the monitoring of drug resistance and developing new drugs through work to further advances in genetics and genomic research, synthetic chemistry, and computational biology.
- *Diagnostics* – Improved diagnostic tools are essential in making early diagnosis and providing rapid treatment. NIAID is funding research that utilizes genomics and related technologies to create rapid, field-applicable, low-cost diagnostics, based on the detection of nuclear acids or proteins in the malaria parasite.
- *Vector Control* – The *Anopheles* mosquito is the vector that transmits the malaria parasite (*Plasmodium*) to humans. Insecticides that eliminate these mosquitoes are important to controlling and preventing malaria. However, reports of insecticide-resistant mosquitoes are on the rise. NIAID is working to create next-generation, environmentally-friendly insecticides for public health use. Research on the basic biology and ecology of mosquitoes, as well as work in genomics, is key to developing means of either killing mosquitoes or rendering them incapable of transmitting malaria.
- *Strengthening Infrastructure and Research Capability* – NIAID is working through the Multilateral Initiative on Malaria (MIM), an alliance of international research donors and scientists, and the WHO Special Program for Research and Training in Tropical Diseases Task Force for Malaria Research Capability Strengthening in Africa to strengthen research capabilities of scientists in their own countries. It is also working to strengthen the tropical disease research infrastructure within the United States.

### **NIH Tropical Disease Efforts – Background**

The NIH, through NIAID conducts research to better understand NTDs, which includes conducting its own basic and clinical studies as well as extramural research. These efforts include:

- Research at the NIAID Laboratory of Parasitic Diseases to uncover how NTD-causing pathogens interact with humans, animals, and the organisms that spread them from host to host. The lab conducts patient-centered research at the NIH Clinical Center in Bethesda, MD, as well as field studies in India, Latin America, and Africa.
- Actively supporting the discovery and development of drugs for NTDs including a low-cost treatment for visceral leishmaniasis and identifying new drugs for sleeping sickness and Chagas disease.
- The Vector Biology Research Program at NIAID supports research on several vectors that transmit agents of NTDs. Many of these projects have field components in disease-endemic areas of the world.
- NIAID also has research repositories that provide researchers with parasite species, standard study protocols, and training.

### ***Fogarty International Center (FIC)***

The FIC addresses global health challenges and supports the NIH mission through multiple activities, including: collaborative research and capacity building projects relevant to low- and middle-income nations; institutional training grants designed to enhance research

capacity in the developing world, with an emphasis on institutional partnerships and networking; the [Forum for International Health](#), through which NIH staff share ideas and information on relevant programs and develop input from an international perspective on cross-cutting NIH initiatives; the [Multilateral Initiative on Malaria](#), which fosters international collaboration and co-operation in scientific research against malaria; and the [Disease Control Priorities Project](#), which is a partnership supported by FIC, The Gates Foundation, the WHO, and the World Bank to develop recommendations on effective health care interventions for resource-poor settings.

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